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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/814,906	CHELBA ET AL.
	Examiner	Art Unit	
	HUYEN X. VO	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 February 2008*.
2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-16* is/are pending in the application.
　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-16* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *31 March 2004* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
　　a) ☐ All   b) ☐ Some * c) ☐ None of:
　　　1. ☐ Certified copies of the priority documents have been received.
　　　2. ☐ Certified copies of the priority documents have been received in Application No. _____.
　　　3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date *3*.
4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 2/28/2008 have been fully considered but they are

not persuasive. Crespo et al. fully anticipate the limitation regarding *"generating*

background n-gram class count data based on the background data and the semantic

entities and classes thereof" (*steps a-b in section 2, page 824, "built a world-bigram LM*

*based on **classes** using both the **mapping frequencies** and the **back-off class-***

***bigram LM"**, and "semantic entities" are words in the new domain*).

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

3.   Claims 12-16 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

4.   Claims 12-16 are drawn to a "program" per se as recited in the preamble (*the*

specification indicates that "computer-readable storage medium" can be "any other

medium which can be used to store the desired information and which can be accessed

by computer". Therefore, the term can be reasonably interpreted as carrier waves and

communication media or media that have not yet been invented) and as such is non-

statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as

embodied in computer readable media are descriptive material per se and are not

statutory because they are not capable of causing functional change in the computer.
See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure
per se held nonstatutory). Such claimed data structures do not define any structural
and functional interrelationships between the data structure and other claimed aspects
of the invention, which permit the data structure's functionality to be realized. In
contrast, a claimed computer readable medium encoded with a data structure defines
structural and functional interrelationships between the data structure and the computer
software and hardware components which permit the data structure's functionality to be
realized, and is thus statutory. Similarly, computer programs claimed as computer
listings per se, i.e., the descriptions or expressions of the programs are not physical
"things." They are neither computer components nor statutory processes, as they are
not "acts" being performed. Such claimed computer programs do not define any
structural and functional interrelationships between the computer program and other
claimed elements of a computer, which permit the computer program's functionality to
be realized.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed
> publication in this or a foreign country or in public use or on sale in this country, more than one year prior to
> the date of application for patent in the United States.

6.   Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Crespo

et al. (IEEE Publication from IDS).

7.   Regarding claim 1, Crespo et al. disclose a method of adapting an n-gram

language model for a new domain, the method comprising:

receiving background data indicative of general text phrases not directed to the

new domain (*large text database in the left branch in figure 2, page 825, or referring to*

step 1 in left column, page 825);

receiving a set of semantic entities used in the new domain and organized in

classes (*task-dependent sentences in the right branch in figure 2, page 825 or referring*

to steps 2-3 in left column, page 825);

generating background n-gram class count data based on the background data

and the semantic entities and classes thereof (*referring to steps 1-4 in left column, page*

825; also referring to section 2 for more detail);

training a language model based on the background n-gram class count data

(*referring to steps 2-4 in left column, page 825, for used by speech/word recognizer*);

and

embodying the language model in a tangible form (*store in memory, figures 1-2*).

8.   Regarding claim 12, Crespo et al. disclose a computer-readable medium having

computer-executable instructions for performing steps to generate a language model,

the steps comprising:

receiving a set of semantic entities used in a selected domain and organized in

classes (*task-dependent sentences in the right branch in figure 2, page 825 or referring*

to steps 2-3 in left column, page 825);

receiving background n-gram class count data correlated to classes of the set of

semantic entities and based on background data indicative of general text (*large text*

database in the left branch in figure 2, page 825, or referring to step 1 in left column,

page 825);

receiving adaptation n-gram class count data correlated to classes of the set of

semantic entities and based on adaptation data indicative of a selected domain to be

modeled (*referring to steps 1-4 in left column, page 825; also referring to figures 1-2*);

and

training a language model based on the background n-gram class count data, the

adaptation n-gram class count data and the set of semantic entities (*referring to steps 2-*

4 in left column, page 825, for used by speech/word recognizer).

9.   Regarding claim 2, Crespo et al. further disclose the method of claim 1 and

further comprising: receiving adaptation data indicative of text phrases used in the new

domain (*task-dependent sentences in the right branch in figure 2, page 825 or referring*

to steps 2-3 in left column, page 825); generating adaptation n-gram class count data

based on the adaptation data and the semantic entities and classes thereof (*task-*

dependent sentences in the right branch in figure 2, page 825 or referring to steps 2-3 in

left column, page 825); and wherein training the language model comprises training

based on the background n-gram class count data and the adaptation n-gram class

count data (*task-dependent sentences in the right branch in figure 2, page 825 or*

referring to steps 2-3 in left column, page 825).

10.   Regarding claim 3, Crespo et al. further disclose the method of claim 2 and

further comprising: generating background n-gram word data based on the background

n-gram class count data and the semantic entities and classes thereof (*large text*

database in the left branch in figure 2, page 825, or referring to step 1 in left column,

page 825); generating adaptation n-gram word data based on the adaptation n-gram

class count data and the semantic entities and classes thereof (*task-dependent*

sentences in the right branch in figure 2, page 825 or referring to steps 2-3 in left

column, page 825); and wherein training the language model based on the background

n-gram class count data and the adaptation n-gram class count data comprises using

background n-gram word data and adaptation n-gram word data (*adapting LM using*

result of right branch and result of left branch).

11.   Regarding claims 4-7, Crespo et al. further disclose the method of claim 3

wherein generating background n-gram word data comprises generating background n-

gram word data for multi-word semantic entities with each data entry comprising a

selected number of words (*left column, page 825*), wherein generating adaptation n-

gram word data comprises generating adaptation n-gram word data for multi-word

semantic entities with each data entry comprising a selected number of words (*left*

column, page 825), wherein generating background n-gram class count data based on

the background data and the semantic entities and classes thereof comprises tagging

word level background data based on the semantic entities and classes thereof (*tagger*

in figure 2), wherein generating adaptation n-gram class count data based on the

adaptation data and the semantic entities and classes thereof comprises tagging word

level adaptation data based on the semantic entities and classes thereof (*tagger in*

figure 2).

12.   Regarding claims 8-11, Crespo et al. further disclose the method of claim 6

wherein generating background n-gram class count data based on the background data

and the semantic entities and classes thereof comprises counting unique class level n-

grams of the tagged background data (*language model adaptation section on page 825*

and/or figure 2), wherein generating adaptation n-gram class count data based on the

adaptation data and the semantic entities and classes thereof comprises counting

unique class level n-grams of the tagged adaptation data (*language model adaptation*

section on page 825 and/or figure 2), wherein generating background n-gram class

count data based on the background data and the semantic entities and classes thereof

comprises discarding some class n-grams from the tagged background data (*language*

model adaptation section on page 825 and/or figure 2), wherein generating adaptation

n-gram class count data based on the adaptation data and the semantic entities and

classes thereof comprises discarding some class n-grams from the tagged adaptation

data (*language model adaptation section on page 825 and/or figure 2*).

13.   Regarding claims 13-16, Crespo et al. further disclose the computer-readable

medium of claim 12 wherein training the language model comprises computing

background word count data based on the background n-gram class count data and the

set of semantic entities (*language model adaptation section on page 825 and/or figure*

2), wherein training the language model comprises computing adaptation word count

data based on the adaptation n-gram class count data and the set of semantic entities

(*language model adaptation section on page 825 and/or figure 2*), wherein training the

language model comprises smoothing the n-gram relative frequencies (*within scope of*

the reference), and wherein smoothing comprises using a deleted-interpolation

algorithm (*within scope of the reference*).

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Ramaswamy et al. (US 6188976) is considered pertinent to the

claimed invention.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to HUYEN X. VO whose telephone number is (571)272-

7631. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Huyen X Vo/   3/20/2008
Primary Examiner, Art Unit 2626

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